

ATLAS OF THE TEXAS SPECIES OF *PHLOX* (POLEMONIACEAE)

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ABSTRACT

In a forthcoming ATLAS OF THE VASCULAR PLANTS OF TEXAS (Turner *et al.* 2002), *Phlox* is treated as having eleven species. Maps showing their distribution in the state are provided, along with comments relating to their taxonomic status, including infraspecific categories. In addition, the nomenclature of each is briefly discussed, along with pertinent synonymy.

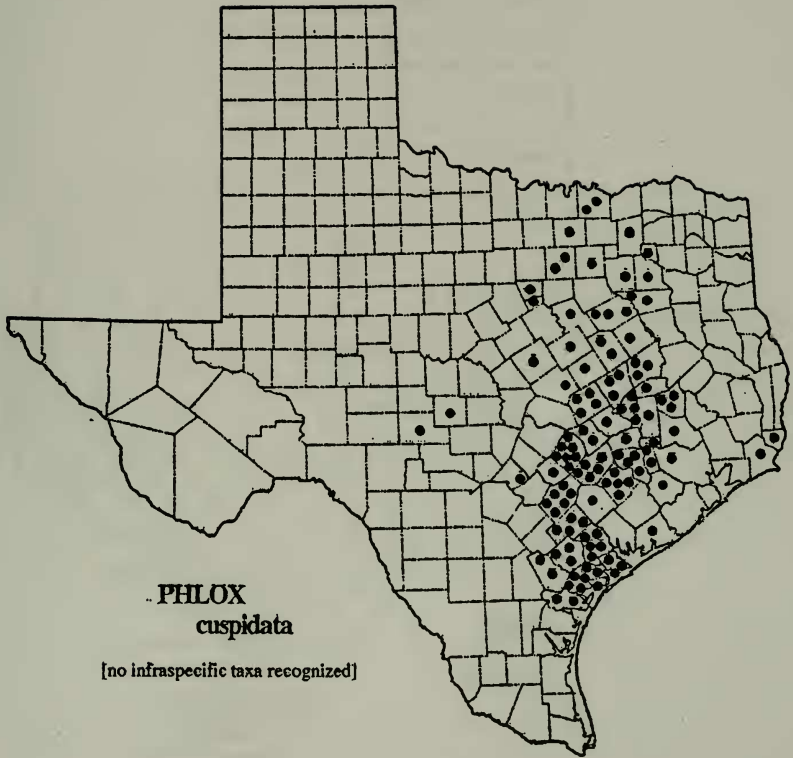
KEY WORDS: *Phlox*, Polemoniaceae, Texas

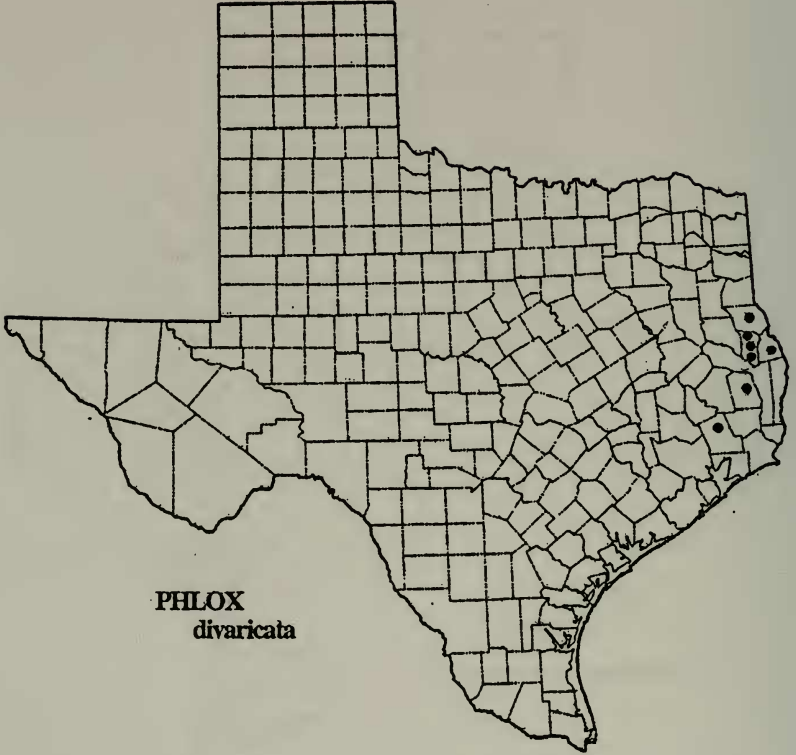
The last revisionary treatment of *Phlox* for Texas was provided by Wherry (1967). Correll & Johnston (1970) adopted the latter's study (essentially intact) in their treatment of the genus for Texas.

My interest in the genus is of long standing, beginning with the work of Erbe & Turner (1962) on the annual species of *Phlox*, continuing through Turner (1998), and culminating with my taxonomic appraisal of the genus for the state in my *Atlas of the Vascular Flora of Texas* (Turner *et al.*, in prep.). The latter treatment accounts for the dot-maps provided in the present, most of which are based upon herbarium records on file at various institutions in the state of Texas, although some of these are based upon published county records from this or that earlier publication (e.g. Wherry 1967; Erbe & Turner 1967, *etc.*).

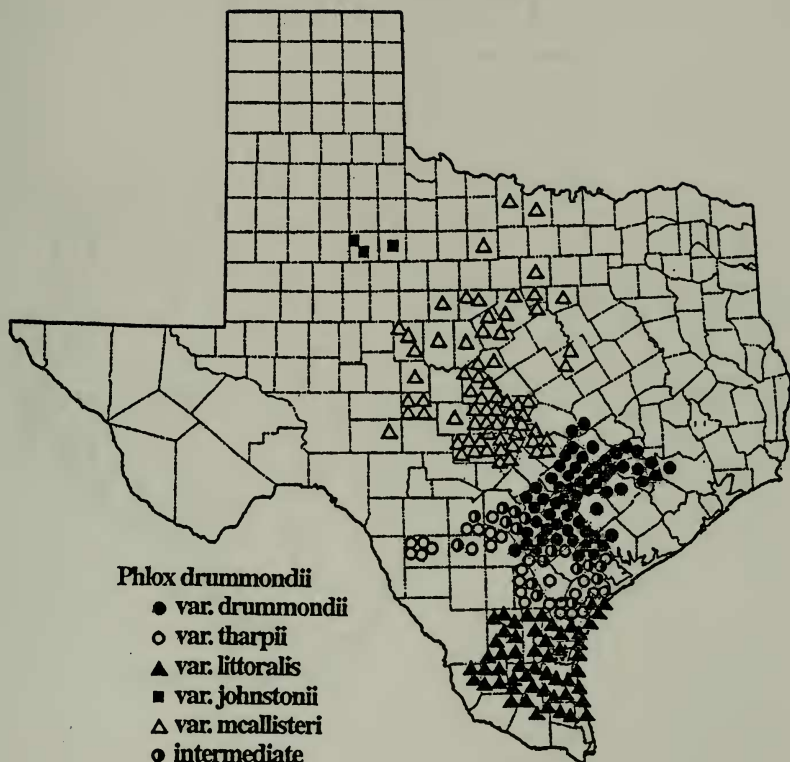
Stimulation for the present contribution was also occasioned by the DNA studies of *Phlox* by Ferguson (1998) and Ferguson *et al.* (1999) on the relationships of the eastern North American taxa. The essence of their studies were presented in phylogrammatic form, their figures noteworthy for their clustering patterns of the



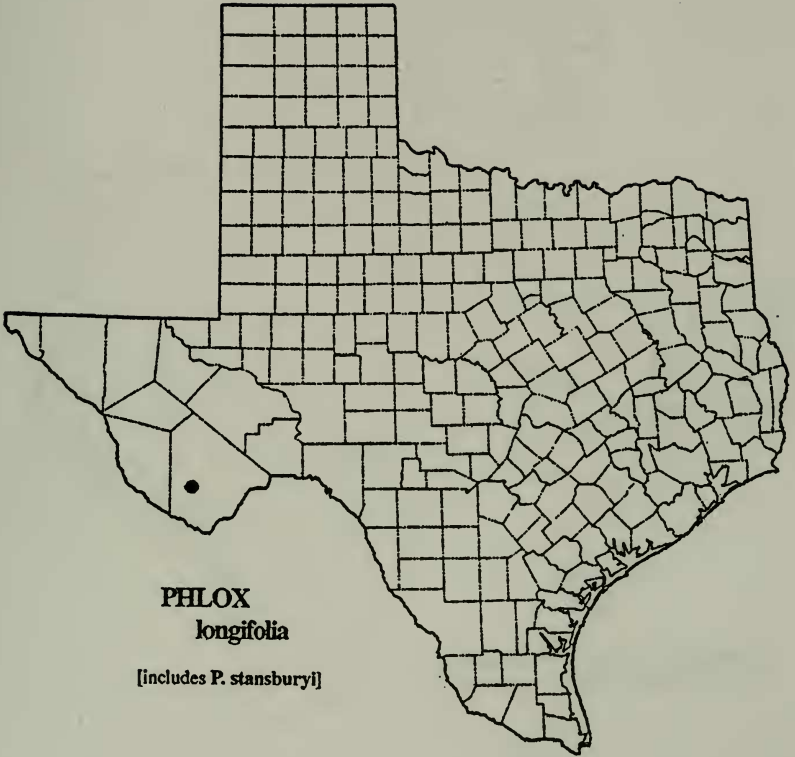


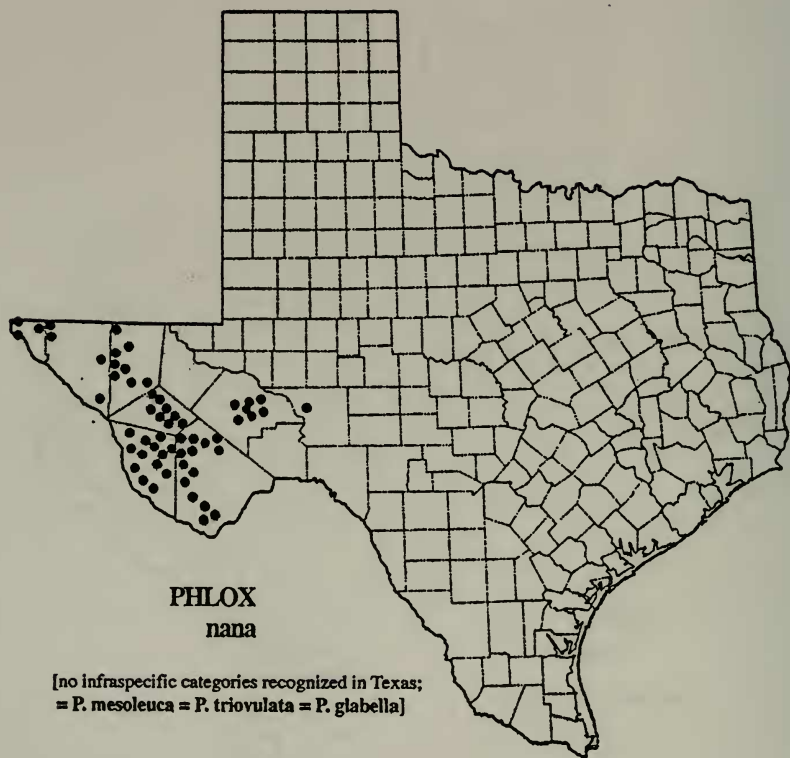


PHLOX
divaricata

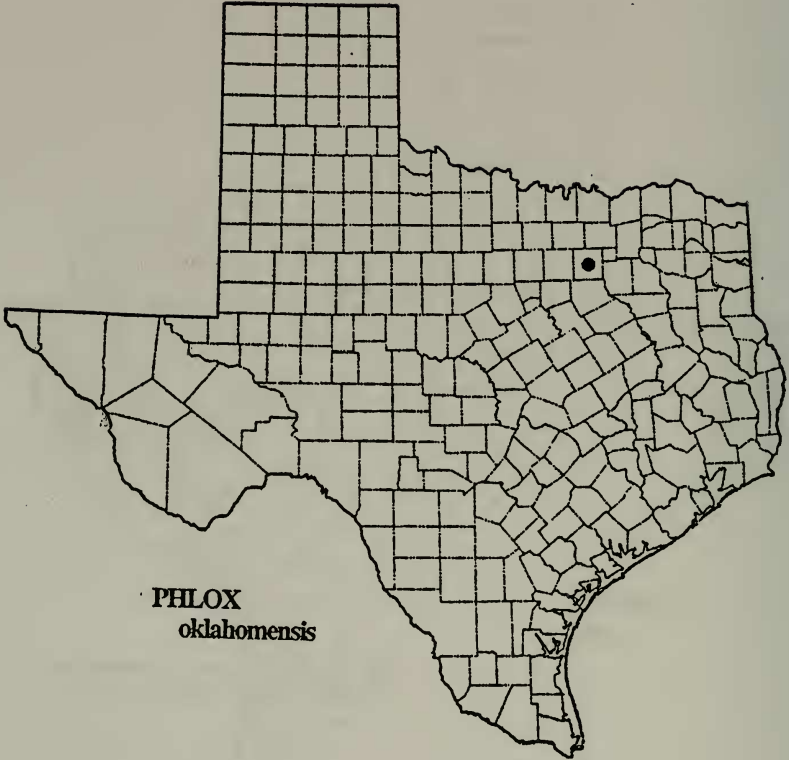


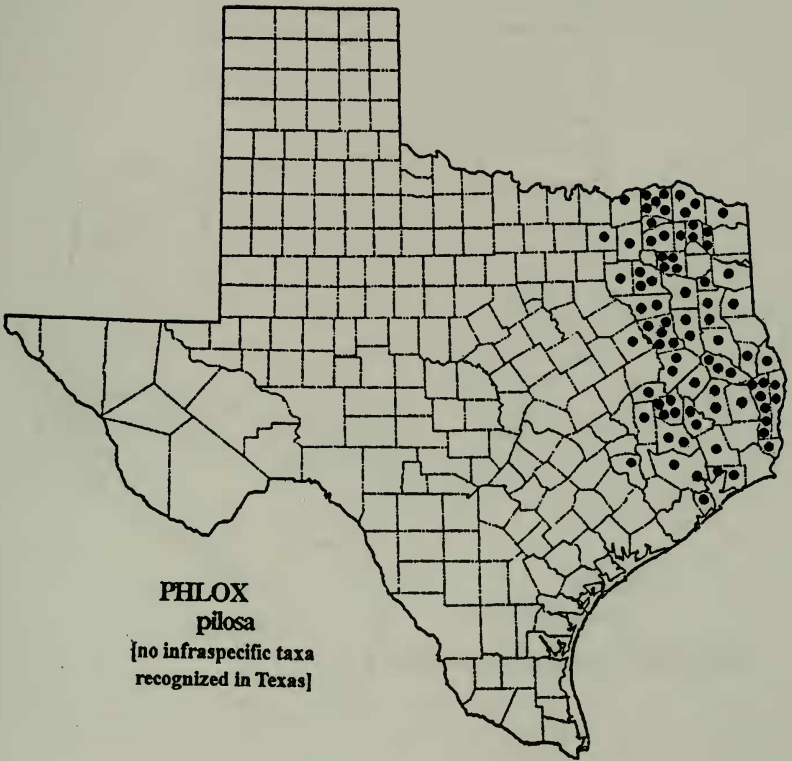




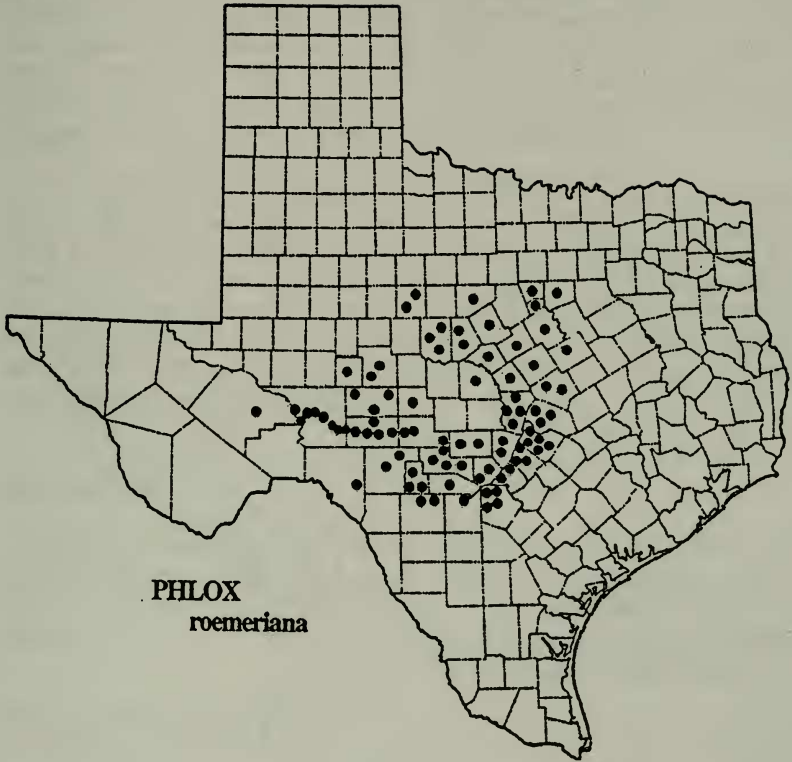


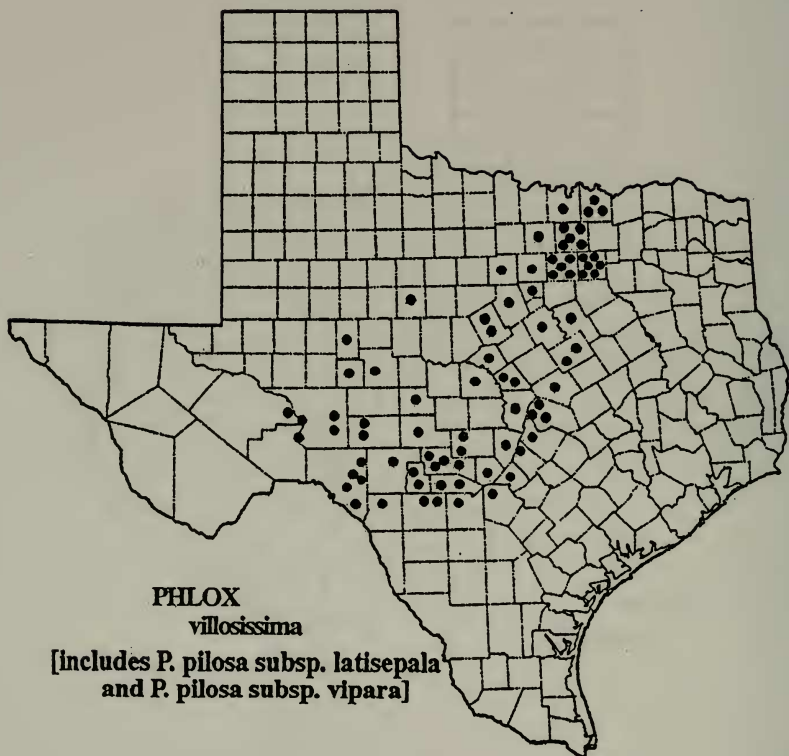












various infraspecific taxa of *Phlox pilosa* L. In particular, I was struck with figures 2 and 3 in Ferguson *et al.* (1999) in which *P. pilosa* subsp. *latisepala* Wherry and subsp. *riparia* Wherry (both largely confined to Texas) formed a compact cluster with the closely related and recently described cohort, *P. pattersonii* Prather. Prior to their work (of which I was ignorant) I had provided an assessment of the Texas taxa of *Phlox*, this including maps showing their distribution in the state. Checking my work against their cladograms, I was pleased to discern that *P. pilosa* subsp. *latisepala* and *P. p.* subsp. *riparia* were treated by me as consisting of a single distinct species, *P. villosissima* (A. Gray) Whitehouse, without recognizable infraspecific taxa, as shown in Figure 12 of the present account.

So as to stimulate the field observations of others on this interesting genus in Texas, I provide here maps, arranged alphabetically, for all of the taxa of *Phlox* which I recognize for the state, along with pertinent nomenclatural and taxonomic observations of my own. It should be noted that I advocate at the specific level an ICBN-based trinomial system of nomenclature in which the subspecies is treated as a category to be used for clustering or divergence purposes, much as the subgenus is used for clustering and/or divergence purposes within the genus, this discussed in more detail by Turner & Nesom (2000).

Phlox carolina L.

I have not examined Texas material of this taxon but Wherry (1967) reports two Reverchon specimens from Smith County. *Phlox carolina* is a well-marked species of the southeastern United States; Texas material belongs to the subsp. *angusta* Wherry.

Phlox cuspidata Scheele

The biology and nomenclature of this taxon is adequately covered by a number of workers, this summarized by Ferguson *et al.* (1999). Wherry (1967) recognized three varieties of this taxon, all of which appear to be but forms of a single variable species, the variability compounded by the occasional hybrid and/or backcrosses with *Phlox drummondii* Hook.

Phlox divaricata L.

This is a relatively rare taxon in Texas, occurring in the easternmost portion of the state, extending into this region from a much wider distribution in the eastern United States. According to Wherry (1967), Texas material belongs to the var. *laphamii* (Wood) A. Gray.

Phlox drummondii Hook.

As treated by Turner (2000), this species is comprised of five intergrading varieties, as shown below; on top of the distribution of these native populations, seeds (or populations) of an additional cultivar, "var. *peregrina* Shinnery," have been artificially strewn by wildflower enthusiasts. Finally, it should be noted that natural variations among populations of *Phlox drummondii* have been compounded by its hybridization with *P. cuspidata* (Levin 1967).

Phlox longifolia Nutt.

Texas material of this taxon was unknown to Wherry. The single known collection is from Brewster Co.: foothills of nine-point mesa, on dry arroyo bank, ca. 60 miles south of Alpine, 21 Sept 1966, Correll 33770 (LL). Initially, I took this collection to be an undescribed taxon, although Correll himself had identified this (by annotation in 1969) as *Phlox mesoleuca* E. Greene, while James Henrickson (by annotation, undated) gave it the name "*P. stansburyi* (Torr.) Heller." I consider the latter to be synonymous with *P. longifolia* (s.l.), an earlier name. *Phlox longifolia* is a western species occurring from western Texas to California and northwards to Canada. Nevertheless, more detailed examination of the Texas material may show this to be deserving of formal recognition since the population concerned is rather remote from the mass of the collections of *P. longifolia* known to me.

Phlox nana Nutt. (s.l.)

Wherry (1967) considered this species complex to comprise three species: *Phlox nana*, *P. mesoleuca*, and *P. triovulata* Thurb. & Torrey. In my opinion, the two latter names are but forms of a very variable *P. nana*, the earliest epithet. Indeed, my own field work in the Trans-Pecos region of Texas has convinced me that these several taxa, as recognized by Wherry, are not even worthy of varietal rank. As noted by Wherry in his numerous citations from Brewster County, all three of his so-called species are sympatric, their recognition depending upon one or relatively few characters, namely habit, leaf size and degree of pubescence, characters which are very variable both within and between populations.

Phlox nivalis Lodd.

This species, according to Wherry (1967), is confined to a limited area in southeasternmost Texas. He recognized Texas material as belonging to the subsp.

texensis Lundell. The latter was subsequently elevated to specific rank as *P. texensis* (Lundell) Lundell. Based largely upon its relatively remote distribution from the main mass of the *P. nivalis* complex, Wherry maintained its subspecific rank, although I prefer to treat the populations concerned at the varietal level, *Phlox nivalis* Lodd. var. *texensis* (Lundell) B.L. Turner, *stat. nov.*---Based upon *Phlox nivalis* Lodd. subsp. *texensis* Lundell, *Contr. Univ. Michigan Herb.* 8:77. 1942.

Phlox oklahomensis Wherry

Wherry (1967) maintained this species, although Shinnors (1963) considered it to be a variety of *Phlox bifida* Beck. Wherry, however, reasoned that the single population concerned was but an extension into Texas of his *P. oklahomensis* and not part of *P. bifida*, the principal distribution of which is more eastern (central Arkansas and northeastwards).

Phlox pilosa L.

Wherry (1967) recognized this species to have five infraspecific taxa in Texas: 1) subsp. *pilosa*; 2) subsp. *latisejala* Wherry; 3) subsp. *riparia* Wherry; 4) subsp. *detonsa* (Gray) Wherry; and 5) subsp. *pulcherrima* Lundell. I recognize his subspecies 1 and 4 as being rather typical of var. *pilosa*, populations of which are largely confined to sandy soils of eastern Texas. I consider his subspecies 2 and 3 as indistinguishable, treating these as belonging to a distinct species, *Phlox villosissima*, populations of which are distinguished by their copious glandular pubescence, as noted by Wherry in his key to subspecies. *Phlox villosissima* occurs largely in limestone soils of the Edwards Plateau in central Texas. Wherry's subsp. *pulcherrima* is treated as a distinct species (*cf.* below), as first proposed by Lundell (1945) and maintained by Ferguson *et al.* (1999).

Phlox pulcherrima (Lundell) Lundell

As indicated in the above, this taxon was originally described as a subspecies of *Phlox pilosa*. Ferguson *et al.* (1999) subscribe to its treatment at the specific level, as do I.

Phlox roemeriana Scheele

This common, very distinctive, central Texas endemic is relatively well understood, phylogenetically speaking, thanks to the work of Ferguson *et al.* (1999).

Phlox villosissima (A. Gray) Whitehouse

As indicated under *Phlox pilosa*, this taxon is made up of Wherry's subsp. *latisepala* (type from Kerr County, Texas) and subsp. *riparia* (type from Uvalde County, Texas). When treated at the specific level the earliest name for the category concerned is *P. villosissima*, the latter first proposed as a variety of *P. drummondii* by Asa Gray in 1870.

ACKNOWLEDGMENTS

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